

Governor's Feral Hog Task Force Report

***Executive Order 07-26 created a
Director/Administrator level multi-
agency Task Force to address the
concerns associated with feral hogs***

Task Force Members

**Missouri Department of Agriculture, Co-chair
Missouri Department of Conservation, Co-chair
Missouri Department of Health and Senior Services
Missouri Department of Natural Resources
Conservation Federation of Missouri
MFA Incorporated
Missouri Farm Bureau
Missouri Forest Products Association
Missouri Pork Association
U.S. Department of Agriculture-Animal and Plant
Health Inspection Service**

April 7, 2008

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Introduction to Feral Hogs and the Governor's Task Force

Feral hogs are defined by Missouri law as: Any swine not conspicuously identified by ear tags or other forms of identification that were born in the wild or that lived outside of captivity for a sufficient length of time to be considered wild by nature by hiding from humans or being nocturnal shall be considered feral hogs {RSMo 270.170.2}.

Feral hogs, also referred to as feral swine, are a serious concern for Missouri. Their rooting and feeding behavior contributes to soil erosion, reduced water quality, and damage to agricultural lands including cropland, pasture and hayfields. Feral hogs are a direct threat to natural resources and native wildlife, including endangered plants and animals. The spread of disease by feral hogs is another major concern and there is potential for these diseases to jeopardize people, pets, wildlife, and livestock and, in particular, the private pork industry in Missouri. Aggressive efforts are needed to deter the development of feral hog populations as well as eradicate those that are known to exist.

Populations of feral hogs are relatively new in Missouri compared to some other states and quick and focused attention to the issues will help safeguard against economic losses that escalate as feral hog populations increase. For example, feral hogs are well established in Texas and Texas A&M University estimates feral hog damages result in a cost to agriculture that exceeds \$51 million annually. Research indicates feral hog populations must be reduced by 70 percent each year simply to keep up with reproduction and in the absence of control efforts, a local population can triple in a single year. Research also suggests hogs must be controlled very aggressively, with multiple methods, over an extended period of time. ***It is important to note that delay in implementation of serious control efforts will result in the need for a stepped-up effort at higher cost and/or more years needed to achieve the eradication goal.***

Governor's Executive Order 07-26

By Executive Order, Governor Matt Blunt created a director/administrator level, multi-agency task force to address the issues associated with feral hogs. The ten-member task force was co-chaired by the directors of the Departments of Agriculture and Conservation. Other members included the Department of Natural Resources, the Department of Health and Senior Services, United States Department of Agriculture-Animal and Plant Health Inspection Service, Conservation Federation of Missouri, Missouri Farm Bureau, MFA Incorporated, Missouri Forest Products Association, and the Missouri Pork Association. The task force was instructed to complete the following:

1. Develop a public educational message regarding the negative impacts associated with feral hogs.
2. Review existing state laws/regulations regarding the illegal release of hogs and propose needed changes.
3. Develop and implement voluntary disease testing standards for feral hogs killed in Missouri.

4. Establish a contingency plan to be followed if disease(s) posing significant threats to human, livestock, and/or wildlife populations are documented in Missouri.
5. Implement aggressive proactive efforts to remove all feral hog populations from public lands and encourage private landowners to concurrently remove feral hogs from their property.
6. Expand regulatory and enforcement efforts aimed at eliminating sources (e.g., escaped animals from traditional hog operations, dumped pets, and illegal releases by individuals desiring to establish populations) of feral hogs.

The task force was also instructed to complete a report outlining steps to be taken to implement/address the above items, the role of each state agency, anticipated costs of implementation, and associated benefits to the citizens and natural resources of Missouri.

The directors of the Departments of Agriculture and Conservation were to provide the report to the Governor within 120 days of the first task force meeting. The first official task force meeting was held on December 7, 2007.

Subcommittees

The Governor's task force was divided into four (4) subcommittees to best address the directives of the Executive Order. Those subcommittees consisted of a Public and Private Land group, a Statutes and Regulations group, a Voluntary Disease Testing group, and an Outreach and Education group. Each subcommittee was assigned portions of the Executive Order directives and asked to arrive at the best approach to deal with each issue, including estimating financial needs.

Feral Hog History, Distribution, and Control Efforts

Free roaming hogs have been present in small, isolated areas of the state for many years. It was not until the 1990s that the feral hog situation in Missouri began to change. Some people began raising and promoting European wild boar as a form of alternative agriculture and for hunting on licensed shooting areas. Hog hunting as a form of recreation gained in popularity in some parts of the United States, including in Missouri, and this led to the intentional release of hogs on public land. Since feral hogs are very adaptable and prolific, local populations increased and spread to surrounding private land.

By the end of the 1990s, the Missouri Department of Conservation (MDC) began receiving damage complaints from private landowners and hog hunting interest in the state was growing. Today, feral hogs are established in over 20 counties, primarily across the southern half of the state. While no population studies have been conducted, the conservative estimate is between 5,000 and 10,000 feral hogs in Missouri.

Feral hogs are often found in the remote, rugged portions of the Ozarks where thick brush and timber make it hard to locate and kill them. Shooting and trapping are the most effective control methods, but total eradication is difficult. The increasing occurrence of illegal releases of hogs by some individuals for the purpose of recreational hunting adds to the problem. In the absence of adequate penalties, these illegal releases further complicate eradication efforts and spread the negative effects of feral hogs to new areas of the state.

Hunters have played a significant role in controlling these unwanted animals, although hunting has not proven to be a sufficient tool to eradicate feral hogs. Without the help of hunters, Missouri would be dealing with significantly larger numbers of feral hogs than what we are dealing with today.

Distribution

Feral hogs are known to exist on both public and private land in Missouri with the most extensive populations found in the west-central and southern portions of the state in association with mosaics of state, federal, and private land. (Figure 1)

On state owned land, feral hog populations are known to exist on Missouri Department of Natural Resources (DNR) and Missouri Department of Conservation lands. Feral hogs can also be found on United States Army Corps of Engineers (USACE) lands, Mark Twain National Forest lands under the management of the United States Forest Service (USFS), and the Mingo National Wildlife Refuge managed by the United States Fish and Wildlife Service (USFWS).

Feral hogs have been eradicated on National Park Service lands within the Ozark National Scenic Riverways and are not a current threat unless new populations develop. Feral hogs have also been eradicated from Ft. Leonard Wood, which is managed by the United States Army, although known populations of feral hogs are located within a few miles of the military installation's boundary.

Feral hogs are often found on private land adjacent to state or federal lands on which feral hogs exist. However, there are numerous instances of feral hog sightings or populations on private land that is not adjacent to public land. Many of the landscapes on which feral hog populations exist are interspersions of state, federal, and private land; therefore, to achieve success, eradication efforts must be continuous, coordinated, and ongoing until feral hogs are totally eliminated. It will also be important to establish ongoing coordination with adjacent states so areas on the Missouri side of the line can be monitored and eradication efforts implemented in the event of feral hog migration into Missouri.

Eradication Effort to Date

It has always been the intention of resource managers to eradicate feral hogs from Missouri due to the property and natural resource damage they cause as well as the threat they pose to human and animal health, especially domestic swine herds. State resource agencies have engaged in efforts to eradicate feral hogs from their land for several years with varied degrees of success. As a result of efforts of an interagency Feral Hog Task Force that predates the current Governor appointed Feral Hog Task Force, some state statutes were revised to include items such as the definition of “feral hog” and a clause that makes the intentional release of swine a misdemeanor.

The United States Department of Agriculture-Animal, Plant and Health Inspection Service – Wildlife Services (USDA-APHIS-WS) has been engaged in feral hog removal in Missouri on public and private land since the late 1990s. Funding for the APHIS-WS effort has been by way of a Congressional Directive in the amount of \$50,000 per year, starting in federal fiscal year 2003 and ending in fiscal year 2006. These funds were used in conjunction with feral hog eradication efforts of the other agencies with land management responsibilities in Missouri as well as the Missouri Department of Agriculture (MDA) in regard to disease testing issues.

The USFS has also worked with APHIS-WS through staff support and annual funding ranging from \$12,000 to \$24,000 for the last three years on feral hog removal efforts within the proclaimed boundary of the Mark Twain National Forest.

Feral hog eradication efforts on state-owned land consist of concerted effort on Johnson Shut-ins State Park and lesser effort on several other state parks. In addition, the Missouri Department of Conservation has been working to eliminate feral hogs on conservation areas as well as adjacent private land and stepped-up efforts in state fiscal year 2008 by directing \$100,000 toward eradication.

The U.S. Army Corps of Engineers as well as the U.S. Fish and Wildlife Service have used the technical assistance of USDA-APHIS-WS to remove feral hogs from lands they administer. In particular, the USACE has been aggressively eradicating hogs on Wappapello Lake and some efforts have been expended at other Corps lakes such as Harry S. Truman Lake at Warsaw.

In spite of individual and cooperative state and federal control efforts, and hogs being killed by hunters, the population of feral hogs continues to increase and appear in new places around the state. This scenario created the need for a more organized and intensified eradication effort on all fronts. The purpose of this task force was to determine the best

approach to deal with the problems feral hogs cause in Missouri by incorporating the viewpoints and resources of multiple state and federal agencies and private interest groups as outlined in the Governor's directive.

Disease

Surveillance and testing has been accomplished by distributing test kits to conservation agents and private landowners (when the latter call in to identify a feral hog problem). MDC personnel also collect specimens from feral hogs caught in traps. After collection, blood specimens are sent to the MDA Diagnostic Laboratory, Jefferson City, and other laboratories as described later in this document. The cost of this effort has been used as an in-kind match to secure federal funding for eradication efforts through USDA-APHIS-WS. The following diseases have been detected in feral hogs in Missouri through this program:

- Pseudorabies: Irish Wilderness (Ripley County), 1992 - infected animals were eliminated.
- Brucellosis: captured in the area at the intersection of the Missouri and Osage Rivers, 1999 - infected animals were eliminated.
- Pseudorabies: brought from Florida and Illinois to Dade County, 2006 – infected animals were eliminated.
- Pseudorabies: in wild-caught swine brought from Tennessee to Jackson County, 2007; this shipment was interdicted by the MDA and the owner eventually destroyed all of the animals.



Feral hogs (trail camera)

Law, Regulation, and Enforcement

The complexity of the issues regarding feral hogs is considerable and, therefore, solutions are challenging. For one, swine are domesticated animals that are normally and customarily raised in captivity and owned by someone. For another, swine are not wildlife and, therefore, not under the jurisdiction of the Missouri Department of Conservation's *Wildlife Code* to regulate in the sense of hunting. However, there is a growing trend of releasing swine in the wild to establish feral hog populations, that no one will claim, for the purpose of hunting. Existing law and regulation have been insufficient to deter illegal introduction of unconfined swine for the purpose of creating free-roaming feral hog populations.

Background

The intentional release of swine is a major contributing factor in the spread of feral hog populations across Missouri. These animals consist of feral hogs that have been trapped at one location and moved to a different location; "pet" pigs such as the Vietnamese pot-bellied pigs that are no longer wanted by their owner; Russian-Eurasian hybrids that have been raised in one location and transported to a new release site; and domestic breeds.

Recreational hunting of feral hogs takes place in at least two forms: traditional hunting with firearms and the pursuit of feral hogs with dogs (hog dogging). Hog dogging requires a substantial investment by the hunter in dogs and equipment, and the investment creates financial opportunities that further proliferate the sport. Financial opportunities include raising, training, and selling dogs; raising and selling swine to hunt; sale of equipment; and demand for guided hunts. Problems are greatest when swine are released for the purpose of hunting to roam freely on public or private land and unwanted populations establish. Another aspect of the industry regards the release, pursuit, and take of swine on licensed hunting preserves that are fenced to contain them. However, even with the best of intentions, swine can and do escape from licensed operations and unwanted feral hog populations can establish. There are currently eight permitted operations in business in Missouri and MDC is currently reviewing the status of these operations.

The neighboring states of Kansas and Nebraska are experimenting with a ban on the hunting of feral hogs in order to stop the incentive for illegal releases of swine. At this time, the effectiveness of these hunting bans has not been decided. In Missouri, a statewide ban on the hunting of feral hogs would require action by the General Assembly since feral hogs are not wildlife and, therefore, not subject to regulation by MDC. However, there is concern that an effort to enact such a hunting ban in Missouri could create controversy that would add uncertainty to the outcome of a legislative effort that would include other effective control and eradication measures. Therefore, the task force has no position on a statewide feral hog hunting ban.

If each state and federal agency regulated their own lands in regard to the pursuit of feral hogs with dogs, it could help eradication efforts. It would be important for all agencies to work in concert for a ban on hog dogging on state and federal land, and while the issue of feral hog hunting with dogs on private land could complicate enforceability, it could remove the public

land hunting incentive from the equation. Adequate penalties that effectively deter illegal release of swine and sufficient funding to eradicate populations of feral hogs are viewed as the most effective keys to success.

Statutory Needs

Due to simplicity, ease of understanding, and enforcement, all rules promulgated should be under a single state statute. The existing feral hog statute, **RSMo 270.260 Release of swine to live in wild or feral state, penalty**, which pertains to the illegal release of hogs, would provide a logical framework in which to incorporate the elements needed to further deter illegal release and transport of feral hogs. The following needs to be accomplished in the revision of RSMo 270.260 in order to adequately address feral hog issues:

- It should be a felony to intentionally release any swine on public land or on private land without adequate confinement.
- It should be a misdemeanor to hold alive or transport feral hogs on or through public lands.
- Statutory language should be adopted that prohibits financial gain from hunting feral hogs. The following language is suggested: *“No person shall engage in, sponsor, instigate, assist, or profit financially from the release, capturing, killing, wounding, or attempted killing or wounding of feral hogs.”*
- Private landowners who capture feral hogs, to include European/Russian boar, on their own property may hold them alive on that same property, but shall obtain a permit from the Missouri Department of Agriculture and build a restraining fence to minimum guidelines expressed as follows to prevent escape. “External boundary fence shall be high tensile stock fencing 1.8 m high and 0.5 m sunk into the ground; + internal electric wire 0.5 m off ground and one strand of electric wire on top; all gates and access areas padlocked at all times.” Violation of this provision should be a Class A Misdemeanor.
- Any peace officer within their geographical jurisdiction should be able to enforce all feral hog statutes and rules, and be able to dispatch feral hogs for eradication purposes. The enforcement clause should also include the Missouri Department of Agriculture’s regulation 2 CSR 30-2.020 on transporting swine in Missouri.

Recommendations

The following actions will result in a regulatory foundation on which to launch education, eradication, and disease testing/contingency plan protocols to effectively address the feral hog situation in Missouri.

1. **Adopt the Missouri Department of Agriculture’s proposed revisions to 2 CSR 30-2.020 Health Requirements for Movement of Livestock, Poultry and Exotic Animals (Appendix A).**

- 2. Reference the above-mentioned rule under the feral hog statute, RSMo 270.260, in regard to enforceability so that any and all peace officers within their geographical jurisdiction could enforce this law.**

Costs

The recommendations of this workgroup were regulatory in nature and will require no additional funding to implement beyond dedicated staff time as necessary to implement said recommendations.



Feral hogs coming to area baited with corn

Education and Outreach

Education and outreach will be necessary and basic to conveying to the public an understanding of the many negative implications of feral hogs. In addition to providing a broad overview of the issue to the general public, targeted outreach to policymakers, community leaders, and the landowner public within geographies containing feral hog populations will be important. Utilization of various media formats will be needed to adequately convey information.

Message

The development of a basic message to communicate to the public is a high priority. This message will maximize the effectiveness of efforts to eliminate feral hogs from Missouri if all agencies and organizations communicate the same message to the public. The following elements are important to communicate to the public, regardless of the media format or delivery method:

- A feral hog is defined as any hog, including the Russian and European wild boar, that is not conspicuously identified by ear tags or other forms of identification and is roaming freely upon public or private lands without permission.
- Feral hogs are reported in more than 20 counties, mostly across the southern half of the state and the intentional and illegal release on public and private land, mostly for hunting purposes, is spreading them to new areas.
- Feral hogs have a high reproductive rate; at least 70 percent of local populations must be destroyed each year simply to stay even.
- Feral hogs are harmful to agriculture by eating row crops, wallowing in pastures and hayfields, destroying fences, killing young trees, and carrying disease to domestic livestock.
- Feral hogs are known to carry more than 30 diseases and have been known to infect people, pets, and livestock.
- The rooting/feeding behavior of feral hogs can degrade soil and water resources as well as compete with wildlife for food and destroy natural areas such as fens, glades, springs, and streams.
- Feral hogs eat everything from acorns, nuts, and fruits; to the eggs, young, and hens of ground nesting birds; frogs; salamanders; lizards; and even fawns.
- Feral hogs are a serious road hazard because they are active at night, dark in color, low to the ground, and their eyes do not shine when lights hit them.

- Feral hogs have attacked people, pets, horses, and livestock and are a threat to campers, hikers and horseback riders.

Recommendations

The following outreach and education methods and actions will be necessary to reach key audiences, including the public in general, concerning the feral hog message.

1. **Produce and distribute a color brochure to convey central messages surrounding feral hogs (50,000 copies of a brochure [Appendix B] have been printed with funding from an APHIS-Veterinary Services [VS] grant to MDA – the brochure is available for distribution). The brochure will need to be updated as needed to reflect any new messages that may occur over time.**
2. **Develop a PowerPoint presentation (15 minutes or less in length) to be distributed to state and federal employees for presenting feral hog information at public meetings across the state in a concise and consistent manner.**
3. **Develop a Feral Hog Fact Sheet that could serve as a source of facts and information to help in the development of press releases, articles, and other outreach efforts.**
4. **Coordinate a press release to generate interest and raise awareness in conjunction with press releases from the Governor's Office concerning the Feral Hog Task Force.**
5. **Redesign and consider the Missouri Department of Conservation's Web page on feral hogs as the official site for feral hog information. Allow for all other state and federal agency websites to contain a link directing any inquiries about feral hogs to said Web page. Explore internet links to other websites that contain information about feral hogs consistent with that of the task force.**
6. **Develop a DVD outlining the concerns surrounding feral hogs to be distributed to state and federal employees for showing at fairs, e.g., Missouri State Fair, public meetings, exhibits, and other venues where appropriate.**
7. **Develop a delivery system to disseminate feral hog information to key groups including, but not limited to: state senators and representatives; county commissions, sheriffs, prosecutors and judges; sale barns and other livestock markets; state and federal offices; district veterinarians; agriculture co-ops and other farm supply outlets; and private agriculture and resource related organizations.**
8. **Continue to use various media outlets, including key magazines such as: *Today's Farmer*, *Missouri Ruralist*, *Rural Missouri*, etc., and any state produced magazines such as the *Missouri Conservationist* to deliver key messages about feral hogs.**

Costs

The cost of printing 50,000 copies of the color brochure that is in circulation was \$3,500. This amount was provided by way of a cooperative agreement from USDA-APHIS-VS to MDA.

Annual State Contribution	
Amount	\$20,000
Purpose	Production and reproduction of brochures and DVDs, and advertising costs to increase public awareness of the problems associated with feral hogs and the need to eradicate them.
Source	USDA funds allocated to Missouri Department of Agriculture through fiscal year 2010. Subsequent funding may need to come through Missouri General Revenue funds.
Administered by	Missouri Department of Agriculture
Total State	\$20,000



Feral hog rooting damage in a pasture

Public and Private Land Eradication

Feral hog eradication effort, in order to be successful, must reside on a strong foundation of legislation that effectively deters additional release of feral hogs. It is also essential that a strong educational effort accompany local eradication initiatives in order to raise awareness of the threat of feral hogs to people, agriculture, and natural resources. Eradication of localized feral hog populations must be aggressive, continuous, and simultaneous on public and adjacent private lands harboring feral hogs. In the absence of aggressive and coordinated effort, feral hogs will simply take refuge on untreated state, federal, or private lands and re-populate adjacent areas anew when eradication efforts cease. It is important to note that feral hog control and eradication methods must be adaptive as more is learned of the behavior and dynamics of feral hog populations as well as the efficacy of removal and other control efforts.

Lessons Learned

Control and eradication efforts regarding local populations of feral hogs in Missouri have been conducted for several years and future efforts will be most effective if built on the lessons that have been learned to date. These are:

- Education and outreach to private landowners is essential to garner support and assistance in eradicating feral hogs from areas involving private land.
- If pursued, feral hogs will travel/refuge on lands where they are not disturbed.
- Eradication is most cost effective and successful when control efforts are implemented on new populations before they become established.
- Baited cage or corral traps work best as they can capture multiple hogs at one time, but feral hogs can become trap wary (particularly if they escape).
- Methods other than trapping are usually needed to totally eradicate feral hog populations.
- Training in recognizing feral hog damage and understanding behavior will help agency staff and affected private landowners to effectively control them.
- Eradication on land of one entity (state or federal agency or private) cannot be fully accomplished without reciprocal effort on the other ownerships.

Challenges

Feral hog populations exist on lands under the control of several state and federal agencies as well as on private land. Regarding public lands, agency policy and operating procedure can differ from one another and that can present challenges in regard to implementation of feral hog

eradication measures. In addition, private land aspects of eradication carry special challenges as well. Key challenges are:

- Differing agency land use policies and staff ability to dispatch free-ranging or captured feral hogs can hamper efficiency and effectiveness.
- Constraints on areas of special sensitivity (such as federal Wilderness Areas and high public use areas) can limit methods used for feral hog eradication.
- Cost of bait and the routine of checking and rebaiting traps can deter ongoing landowner participation.
- Interspersion of private and national forest lands as well as extensive road access to national forest lands creates ownership and access complexities.
- Agencies are not staffed to address major feral hog eradication and meet the many management and public service needs for which the lands exist.
- Feral hog populations in adjacent states could serve as a reservoir that contributes to continuing populations in Missouri.

Recommendations

The following are based on current understanding of feral hog populations on public and private land and are recommended for implementation as soon as possible:

- 1. Development of a Memorandum of Understanding (MOU) among state and federal agencies to express solidarity, unified vision, and commitment to feral hog eradication as well as to identify reciprocal support needs.**
- 2. Agency by agency, pursue the following special dispensations as needed to make eradication efforts a success:**
 - **Agency staff trained/approved to dispatch feral hogs or provide assistance as requested by other agencies that cannot dispatch feral hogs.**
 - **Special approaches identified for lands where high public use or management constraints limit the use of typical eradication approaches.**
- 3. The Conservation Commission is encouraged to assess the use of Eurasian boar and any hybrids on licensed shooting preserves in regard to the potential risk of escape.**
- 4. Define localized populations geographically (single repository for this information identified in the interagency MOU) and agency stakeholders work together to tailor eradication strategies and identify coordination protocol (who does what and when).**

5. **Initiate an informational effort in advance of concerted eradication efforts on public and adjacent private land in areas of feral hog infestation that include:**
 - **Outreach to landowners, local citizens, county commissioners, judges/prosecuting attorneys and other key groups or individuals.**
 - **Private property rights and voluntary participation aspects of eradication should be emphasized along with the destructive nature of feral hog activities.**
6. **Establish a coordinated agency approach that incorporates cooperation with private landowners to ensure eradication efforts within treated geographies are comprehensive enough to not leave a residual of feral hogs that can reestablish populations once eradication efforts cease.**
 - **Initiate an immediate and ongoing feral hog eradication effort, subject to budgetary capability, with APHIS-WS serving as the coordinating entity.**
 - **Through contracting with APHIS-WS, establish a coordinator position in each of three geographic subdivisions of Missouri as per Figure 2 to address private land eradication needs.**
 - **APHIS-WS coordinators would serve as a point of contact for receiving reports of feral hog populations, maintaining population sighting records, staying aware/maintaining contact with other states with feral hog populations adjacent to the Missouri state boundaries, and monitoring areas where feral hogs have been thought to be eradicated.**
 - **APHIS-WS would coordinate the private land feral hog eradication effort with state/federal agency stakeholders, within the geographic subdivision.**
 - **APHIS-WS coordinators would provide training in feral hog behavior and damage identification as well as eradication techniques.**
 - **APHIS-WS coordinators would provide support in the dispatch of feral hogs, collection of blood samples for disease monitoring, coordination of equipment loan and bait distribution, sub-contract for dog handler/dogs for cleanup operations, etc.**
 - **Continue the APHIS-WS three-coordinator approach for a minimum of five (5) years, with the flexibility to adapt if conditions change or research points to a better direction, and evaluate the initiative to determine success and future action.**
 - **It is important to note that delay in implementation of this approach, due to reproductive capability of feral hogs and ongoing new releases of feral hogs, will result in the need for a stepped-up effort at higher cost and/or more years needed to achieve the eradication goal.**
7. **It is desirable that each state and federal agency with feral hogs on their lands proceed with eradication subject to budgetary, staffing, and policy constraints. Development of an interagency MOU (as per item #1 above) would establish the cooperation and coordination framework necessary for success. APHIS-WS is the logical coordination entity since that would best complement the private land aspect of eradication as depicted in item #5 above. It is essential that eradication be**

coordinated, comprehensive, deliberate, and ongoing to maximize eradication success. *Inattention to feral hog eradication on the land of any single agency will provide refuge for feral hogs that will quickly reestablish populations on adjacent private land and other agency land once eradication efforts cease.*

- Each agency is responsible for eradication of feral hogs on their lands. An option would be to contract with APHIS-WS to provide support similar to that provided on private land (contracted coordinator).
- Feral hog eradication, to be successful, must be simultaneous on all state, federal, and private land in individual geographies in which feral hogs are known to exist.

Costs

The following cost estimates are based on the population status of feral hogs at this point in time – inaction and/or delay in funding/implementation of a coordinated public and private land approach will increase costs. It is also important to note that, although public and private land costs are separated, the interspersed nature of public and private land in many regions of Missouri makes coordination and flexibility essential in order to achieve eradication.

Annual State Contribution	
Amount	\$520,000 (annually over a 5-year period)
Purpose	Contribution for costs associated with hiring three (3) USDA-APHIS-WS personnel for full-time feral hog control work on private land in Missouri, as well as to provide traps/equipment for loan to landowners.
Source	Missouri General Revenue
Administered by	Department of Natural Resources Soil and Water Conservation Program
Total State	\$520,000
Federal Contribution	
Amount	\$470,000 (annually over a 5-year period)
Purpose	For USDA-APHIS-WS to conduct hog control work on Federal public land such as USFS (Mark Twain National Forest), USACE, and USFWS land.
Source	Federal Budget
Administered by	USDA/APHIS
Total Federal	\$470,000

Disease Testing and Contingency Plan

The presence of feral hogs in Missouri creates potential for disease that has implications to humans, animal agriculture, pets, and wildlife. Surveillance of these populations and voluntary testing of feral hogs killed through eradication efforts can help identify the presence of disease so that containment measures can be implemented.

General Considerations

In accordance with national domestic hog disease surveillance programs, population and disease estimates are needed for feral hogs; therefore, testing of feral hogs is part of this regulatory program. The subpopulations of feral hogs around the state may be unique and are isolated enough to have different diseases and disease prevalence. The surveillance/testing program needs flexibility to respond to these differences.

If multiple diseases are identified, the Feral Hog Task Force or some other entity will need to prioritize activities with respect to the population subgroups. For example, is a response to cases of brucellosis more important than to cases of pseudorabies or vice versa? For another example, are zoonotic diseases more important from a public health standpoint or the livestock disease standpoint? When diseases are identified, adjustments may need to be made in surveillance and testing criteria (e.g., changes in sampling intensity, area of testing, etc.). A decision will need to be made when disease is found in a herd, to either stop testing the herd (since the disease will have been identified) or to continue testing (e.g., to maintain public support for the program). Also, a decision will need to be made regarding when to stop testing if disease is not found.

The figure of 500 killed and tested hogs per year will be used for initial budgetary planning purposes and it is important to note that annual costs will tend to decrease as swine populations decrease.

In any event, it is important that the Feral Hog Task Force continue to exist after the final plan of action is released, to provide oversight and/or recommendations to personnel involved in conducting feral hog surveillance, testing, and eradication.

Diseases and Testing Rationale

There are a number of diseases for which feral hogs taken through eradication efforts should be tested. These are:

- Brucellosis – Continue to test feral hogs since testing of domestic swine for this disease is part of the national regulatory program.
- Pseudorabies virus (PRV) – Continue to test feral hogs since testing of domestic swine for this disease is part of the national regulatory program.

- Classical swine fever (CSF) – Continue to test feral hogs since testing of domestic swine for this disease is part of the national regulatory program.
- Tularemia – Continue to test feral hogs since this is a significant zoonotic disease (i.e., can be transmitted from animals to humans) and is very common in Missouri.
- Porcine Reproductive and Respiratory Syndrome (PRRS) – Test feral hogs for this disease since the vaccine is not sufficiently effective to solve the problem of commercial swine contracting PRRS from feral hogs; the agent that causes this disease may aerosolize for up to one-half mile; and the test is well established and not expensive.
- Leptospirosis – Test feral hogs for this disease since *Leptospira pomona* is well adapted to swine and has public health significance. Examples: Documented human cases can be traced back to swine-contaminated water; nine human cases of leptospirosis in 1998 were traced to exposure to infected swine at the University of Missouri-Columbia¹.
- Influenza – Test feral hogs for influenza A subtypes H1, H2, and H3 since subtypes H1 and H3 are endemic in many swine herds in Missouri and because subtype H2 was isolated from two separate Missouri swine herds in 2006; influenza in swine may pose a public health risk since swine are “mixing vessels” for human and animal forms of the influenza virus; feral hogs may interact with wild waterfowl (e.g., while wallowing in marshes) and may thereby contract avian forms of this virus.
- Trichinosis – Test feral hogs for this disease since it has public health significance, and because a new blood test for it exists (the test no longer requires submission of a muscle tissue specimen).
- Archived Specimens: Approximately 300 specimens collected so far from feral hogs have been archived at the National Wildlife Research Center (NWRC), Ft. Collins, Colorado. These specimens have been tested for brucellosis, PRV, CSF, and tularemia. It is recommended that portions of specimens collected in the future continue to be archived in this manner so that studies may be conducted of pathogens that are not of obvious significance at the present.

Methodology for Collecting, Shipping, and Testing Specimens

Blood specimens should be collected in the same manner and utilizing the same protocol that is currently in place. The following describes the method and procedure:

- Distribute test kits (Figure 3) and a specimen collection instruction sheet (Figure 4) to private landowners when they call MDC and/or USDA-APHIS-WS to identify a feral hog problem. Landowners will collect and ship specimens in accordance with these instructions.

¹ Journal of the American Veterinary Medical Association, 1 March 2000, Vol. 216, No. 5, Pages 676-682.

- Distribute test kits and instruction sheets to MDC and APHIS-WS agents who will in-turn make them available to landowners.
- MDC and APHIS-WS agents may collect specimens directly from feral hogs caught in traps, harvested, etc.
- After collection, the landowner or MDC/APHIS-WS agent will mail blood specimens to the MDA Diagnostic Laboratory in Jefferson City. Subsequent testing will be conducted as follows (these activities are summarized schematically in Figure 5): The MDA Diagnostic Laboratory will test for brucellosis, PRV, and PRRS, and:
 - 1) Prepare and ship a portion of the specimen to the Veterinary Medical Diagnostic Laboratory, College of Veterinary Medicine, University of Missouri-Columbia to be tested for (a) Influenza A subtypes H1N1 and H3N2; any non-H1 or non-H3 subtypes that are isolated will be sent to the State Public Health Laboratory, DHSS, Jefferson City, for shipment to the Centers for Disease Control and Prevention (CDC), Atlanta, Georgia, for further testing at no charge; (b) Leptospirosis; (c) Trichinosis.
 - 2) Prepare and ship a portion of the specimen to the USDA Plum Island Animal Disease Center, New York, to be tested for CSF.
 - 3) Inoculate laboratory test paper (“Nobuto strip”) with blood and forward it to APHIS-WS for subsequent shipment to CDC, Ft. Collins, Colorado, to be tested for tularemia.
 - 4) Prepare and ship a portion of the specimen to the NRWC, Ft. Collins, Colorado, to be archived.
- As noted previously, approximately 300 feral hog blood specimens collected during 2006 and 2007 were tested for brucellosis, PRV, CSF, and tularemia. A portion of each specimen was also archived at the NRWC, Ft. Collins, Colorado. It is recommended that these specimens be returned to the MDA Diagnostic Laboratory, Jefferson City, Missouri, for PRRS testing. Such “retrospective” surveillance will provide information regarding the prevalence of PRRS in Missouri’s feral hogs, and will serve as a guide for future (prospective) testing for this disease.

Contingency Plan

If any of the diseases previously noted in this document are detected in feral hogs and present a threat to human, livestock, and/or wildlife populations, adjustments may need to be made in testing priorities, surveillance criteria, testing methodologies, etc. Testing for specific diseases in addition to those noted previously in this document may be necessary in the event that emergent/re-emergent diseases present a threat to humans, livestock, and/or wildlife. Testing feral hogs for tuberculosis will not be conducted initially, but if *Mycobacterium bovis* is found in any species (livestock or wildlife), then testing of feral hogs should be instituted.

Specific plans for each agency are shown below. Each plan addresses two issues, “Surveillance” (How will the agency know if diseases are transmitted from feral hogs to commercial livestock, wildlife, or humans?), and “Response” (How will the agency respond to contain such cases and prevent further transmission from feral hogs?).

- USDA-APHIS-WS: **Surveillance** - Disease in wildlife populations will be detected via reporting by APHIS-WS and MDC field staff, laboratories that test wildlife specimens, other agencies, and concerned citizens. **Response** - An epidemiological investigation of the cases(s) will be initiated to determine the source of disease. Knowledge of the types and prevalence of diseases endemic in feral hogs will aid in such investigations. It may also be necessary to “sample” more feral hogs by increasing capture/collection efforts and submitting specimens for laboratory analysis. Activities such as these will help define the role that feral hogs play, if any, in the transmission of infectious agents. APHIS-WS will also provide a support function in situations where efforts need to be made to prevent further transmission. If eradication of feral hogs is required, APHIS-WS will intensify control efforts, which would include the use of appropriate traps, baited shooting, nighttime shooting, bay dogs, Judas pigs, aerial gunning, and/or cable restraints, depending on factors such as the type of disease and vegetative cover in the area of eradication. If domestic hog operations must be depopulated to help control the spread of disease, APHIS-WS may supply staff to help control herds while depopulation activities are ongoing.
- MDC: **Surveillance** - Disease in wildlife populations will be detected via reporting by MDC and APHIS-WS field staff, laboratories that test wildlife specimens, other agencies, and concerned citizens. **Response** – Diseases carried by feral hogs will not have population level implications to wildlife. Some predators can become infected with pseudorabies, but they are a dead-end host. If pseudorabies is found, the response of MDC will be to continue monitoring predator species in the area to see if infection can be traced back to feral hogs.
- MDA: **Surveillance** - Diseases that may be transmitted from feral hogs to commercial livestock populations will be detected using systems currently in place to detect introductions of disease from other sources, i.e., detection and reporting by major swine producers or through a report of symptoms (and investigation) by MDA veterinary staff and/or accredited private-practice veterinarians. **Response** - Similarly, the response to disease introduction from feral hogs will be handled in essentially the same manner as disease that originates from other animals or environmental reservoirs. Existing plans and protocols primarily use foot and mouth disease as the model, but are written in a form that is readily adaptable to any crisis. Annex W of the State Emergency Operations Plan addresses MDA’s response at the “macro” level with a matrix and appendix that describe the support that would be requested from other state agencies. MDA has an internal response plan that describes actions that would be implemented within that department. Key features of Annex W and the internal plan include, among other things, a proactive public information program, involvement by producers and their herd veterinarians, increased testing of domestic animals, possible culling of livestock, and procedures to request supporting federal assets.
- DHSS: **Surveillance** – In a collaborative effort with local public health agencies, the Department of Health and Senior Services (DHSS) administers a number of active and passive surveillance systems designed to detect the occurrence of human disease resulting from infectious and environmental sources. Many of the diseases currently tracked by

these systems are zoonotic, and any transmission of disease from feral hogs to humans should therefore be detectable through this existing framework of surveillance. Human disease surveillance reports and summaries are available on the web at <http://www.dhss.mo.gov/DataAndStatisticalReports/index.html>. **Response** – The routine response to cases or outbreaks of infectious disease, zoonotic or otherwise, usually begins with the local public health agency. If needed, local health authorities may request DHSS support in the form of resources and/or staff (the latter are located in five districts encompassing the state along with central office staff in Jefferson City). DHSS may, in turn, request assistance from federal agencies such as CDC. The response of DHSS to “non-routine” contingencies would be conducted in accordance with plans and protocols maintained by the department.

Recommendations

The following are recommended to address disease aspects of feral hog populations:

1. **Implement the disease testing protocol as outlined above.**
2. **Adopt the contingency plan as outlined above.**

Costs

While most of the costs of testing are borne by state agencies, the federal government (USDA, CDC) conducts some testing and/or provides testing materials without charge to state laboratories. Of the state total, \$17,407 is the “new” cost required to test for diseases not previously tested for, i.e., PRRS (ongoing), leptospirosis, influenza, trichinosis, and archived specimens tested for PRRS (the latter is a one-time cost).

Annual State Contribution	
Amount	\$17,407 (new funding) (plus \$12,350 current funding)
Purpose	To maintain current disease testing efforts and to increase testing for other diseases determined important but not currently tested for.
Source	Missouri General Revenue funds budgeted through the Missouri Department of Agriculture
Administered by	Missouri Department of Agriculture
Total State	\$29,757
Federal Contribution	
Amount	\$39,585
Purpose	To maintain current disease testing efforts and to increase testing for other diseases determined important but not currently tested for by USDA-APHIS and the Centers for Disease Control and Prevention (CDC).
Source	Federal Budget
Administered by	USDA/APHIS and CDC
Total Federal	\$39,585



Feral hog rooting damage on golf course

Feral Hog Task Force Funding Needs

As with any type of eradication effort, financial resources are a crucial component for a successful outcome. The eradication of feral hogs from Missouri's landscape will require a cooperative effort by all landowners – private, state, and federal - who have had the misfortune of having their property degraded by the invasive feral hog.

Having private, state, and federal landowners involved and each having their own budget processes will be challenging, but this hurdle is one that can be overcome. Each landowner category and the respective agencies involved will need to exhibit financial responsibility in the eradication effort. State and federal agencies should be responsible for eradication costs on their respective properties. In order for agencies to participate effectively in an eradication program, additional funding will be needed. Private land eradication costs will need to be appropriated from general revenue funds.

Separating public and private funding sources is always a sound business principle. However, since many feral hog populations are intermingled on public and private lands in certain locales, there will be a need for coordination and flexibility if eradication goals are to be met.

Each of the designated workgroups has submitted the following cost estimates to carry out the action plan for eradication. *The following cost estimates are based on the population status of feral hogs at this point in time – inaction and/or delay in funding/implementation of a coordinated public and private land approach will increase costs.*

Feral Hog Eradication Budget Estimates (Annual allocation unless otherwise noted)			
Subcommittee	State Contribution	Federal Contribution	Total
Law, Regulation, and Enforcement	\$0.00	\$0.00	\$0.00
Education and Outreach	◆\$20,000.00	\$0.00	\$20,000.00
Public and Private Land	*\$520,000.00	*\$470,000.00	\$990,000.00
In-kind contributions by MDC and DNR	❖\$250,000.00	\$0.00	\$250,000.00
Disease Testing and Contingency Plan	\$17,407	\$39,585.00	▲\$69,342.00
Total Budget	\$807,407.00	\$509,585.00	\$1,329,342.00

◆ Funding provided through a cooperative agreement with USDA-APHIS-VS.

* Amount represents an annual contribution for 5 years.

❖ Based on current expenditures of equipment, personnel, and operational costs, the Missouri Departments of Conservation and Natural Resources are projecting contributions for feral hog control efforts on state public land to be in excess of \$250,000 for fiscal year 2009. These funds are budgeted through each organization's current fund balances.

▲ Total includes current funding level for disease testing of \$12,350. The \$17,407 is the increased funding necessary to implement recommended additional testing.



Feral hog in corral trap

APPENDIX A
2 CSR 30-2.020 Movement of Livestock, Poultry and Exotic Animals within Missouri

**Title 2—DEPARTMENT OF
AGRICULTURE
Division 30—Animal Health
Chapter 2—Health Requirements for
Movement of Livestock, Poultry and
Exotic Animals**

2 CSR 30-2.020 Movement of Livestock, Poultry and Exotic Animals Within Missouri

(2) Swine.

(A) All swine (except slaughter swine) exchanged, bartered, **gifted**, leased or sold within Missouri must be veterinary inspected and identified by official eartag, ear notch, tattoo or other approved device upon change of ownership or leasing. All swine must be quarantined for thirty (30) days upon change of ownership or leasing.

(B) Swine offered for sale that do not pass a veterinary inspection for health shall be eartagged and remain on or returned to the farm of origin under quarantine, or be shipped directly to slaughter. Quarantined animals not amenable to treatment shall remain under quarantine until released for slaughter.

(C) All Missouri origin sows and boars not under quarantine sold for slaughter are to be individually identified by a backtag, eartag, tattoo or other approved device at the first point of concentration.

(D) *[Swine determined to be infected with or exposed to pseudorabies, as determined by an official pseudorabies test, virus isolation or clinical symptoms, shall be quarantined and an individual herd cleanup plan which initiates herd tests be developed. The state veterinarian shall approve all diagnostic tests for pseudorabies used in Missouri. Suspected pseudorabies will be reported to the state veterinarian's office]* **Eurasian and Russian swine, regardless of age, raised on concrete, must be veterinary inspected and identified by official eartag, ear notch, tattoo, or other approved device upon change of ownership or leasing and must be quarantined for thirty (30) days upon change of ownership or leasing. If not raised on concrete they must meet the following requirements:**

1. Be individually identified by official eartag, ear notch, tattoo, or other approved device and listed on the Certificate of Veterinary Inspection.

2. Have two (2) negative tests for brucellosis and pseudorabies ninety (90) days apart, held separate and apart from other swine during the ninety (90) day period. Negative test results and date of tests must be listed on the Certificate of Veterinary Inspection; or

3. Originate from a validated brucellosis-free herd with herd number and current herd test date listed on the Certificate of Veterinary Inspection; and

4. Originate from a qualified pseudorabies-free herd with herd number and current herd test date listed on the Certificate of Veterinary Inspection.

(E) *[Use of pseudorabies vaccine in Missouri must have prior approval of the state veterinarian. Swine vaccinated with pseudorabies vaccine may be quarantined at the discretion of the state veterinarian. All vaccinated herds shall participate in a herd cleanup plan]. Feral (including Eurasian or Russian) swine or transitional swine, regardless of age, must meet the following requirements:*

- 1. Must be individually identified and listed on the Certificate of Veterinary Inspection.**
- 2. Have two (2) negative tests for brucellosis and pseudorabies ninety (90) days apart, held separate and apart from other swine during the ninety (90) day period. Negative test results and date of test must be listed on the Certificate of Veterinary Inspection.**

(F) *[Pseudorabies-quarantined swine can only be moved to an approved slaughter-swine-only market, slaughter establishment. All movements from quarantined herds shall be accompanied by a VS 1-27 shipping permit or owner/shipper statement. The transport vehicle must be cleaned and disinfected before it is used to transport swine or feedstuffs within the following thirty (30) days]* **Market-to-market movement of swine within Missouri is prohibited except for movement to slaughter-swine-only markets.**

(G) *[Market-to-market movement of swine into and within Missouri is prohibited except for movements to slaughter-swine-only markets]* **Movement other than commercial swine.**

- 1. Feral (including Eurasian and Russian) swine may move only from a farm directly to slaughter or to a slaughter-only market.**
- 2. Transitional swine may move only to a licensed livestock market/sale or to slaughter.**
- 3. Feeder pigs from transitional swine herd may move to a market to be inspected and eartagged then move from the market under quarantine to be finished for slaughter.**

[(H) Swine moving within Missouri shall be quarantined to the owner's premises for a period of thirty (30) days following the first move. One (1) move is defined as farm-to-farm or farm-to-market-to-farm. This applies to all swine, except those moving for slaughter or exhibition at scheduled fairs and shows.]

HISTORY

Today feral hogs are reported in more than 20 counties mostly across the southern half of the state. In the 1990s people began raising and promoting wild boar for hunting on licensed shooting areas. Hog hunting has become very popular. The illegal intentional release of hogs on public and private lands has spread them to new areas.



BIOLOGY

Feral hogs can raise a litter every 4 months. This could mean 2-3 litters per sow per year. In order to control these animals, at least 70% need to be destroyed every year.



It is against the law to release any type of hog on public land in Missouri.

Please report all illegal releases of feral hogs to the Operation Game Thief (OGT) 24-hour hotline at 1-800-392-1111

<http://www.mdc.mo.gov/hunt/gamethief/>

GOVERNOR'S TASK FORCE

In 2007 the Governor of Missouri created, by Executive Order, a Director/Administrator-level multi-agency task force to address concerns associated with feral hogs. The 10-member task force is co-chaired by the Directors of the Missouri Departments of Agriculture and Conservation. The Missouri Departments of Natural Resources and Health and Senior Services are also members. Other members are top-level staff from the Conservation Federation of Missouri, MFA Incorporated, Missouri Farm Bureau, Missouri Forest Products Association, the Missouri Pork Association, and the United States Department of Agriculture-Animal and Plant Health Inspection Service.



www.mda.mo.gov



www.mdc.mo.gov



www.dhss.mo.gov



www.dnr.mo.gov



www.confedmo.org



www.mfo-int.com



www.mofb.org



www.moforest.org



www.mopork.com



www.aphis.usda.gov

For more information:

Southeastern Cooperative Wildlife Disease Study

<http://www.uga.edu/scwds>

Texas Animal Health Commission

<http://www.tahc.state.tx.us>

Noble Foundation

<http://www.noble.org>

FERAL HOGS



MISSOURI'S BIGGEST THREAT TO WILDLIFE & AGRICULTURE

The legal definition of "feral hog" is any hog, including Russian and European wild boar, that is not conspicuously identified by ear tags or other forms of identification and is roaming freely upon public or private lands without permission.

Source: Missouri State Statute.

WILDLIFE

Feral hogs, with their rooting and feeding, cause:

- Competition for food with Missouri's wildlife, especially deer and turkey
- Soil erosion
- Reduced water quality

Feral hogs eat everything. In addition to acorns, nuts, and fruits, they feed on:

- Eggs, young, and hens of ground-nesting birds
- Frogs, salamanders, lizards, and other reptiles
- Wildlife young, including fawns

Feral hogs destroy natural areas such as:

- Fens
- Glades
- Springs
- Streams



AGRICULTURE

Feral hogs damage production agriculture in Missouri in many ways:

- Rooting and wallowing in pastures and hayfields
- Eating row crops
- Destroying fences
- Ruining forests by killing young trees



Feral hogs are a direct threat to cattle, swine, and poultry by carrying disease, robbing feeders, and fouling water supplies.

Feral hogs feed on young calves, lambs, and goats.



DISEASE & THREATS

Feral hogs have been known to infect people, pets, and livestock. Feral hogs in other states are known to carry more than 30 diseases including:

- Brucellosis
- Pseudo-rabies

Feral hogs are a serious road hazard:

- Active at night
- Dark in color
- Low to the ground
- Eyes don't shine when lights hit them



Feral hogs have attacked people, pets, horses, and livestock while protecting their young or territory.

- Campers, hikers, and horseback riders beware!



**Report illegal releases of feral hogs to the Operation Game Thief (OGT) 24-hour hotline at 1-800-392-1111
<http://mdc.mo.gov/landown/wild/nuisance/hogs/>**

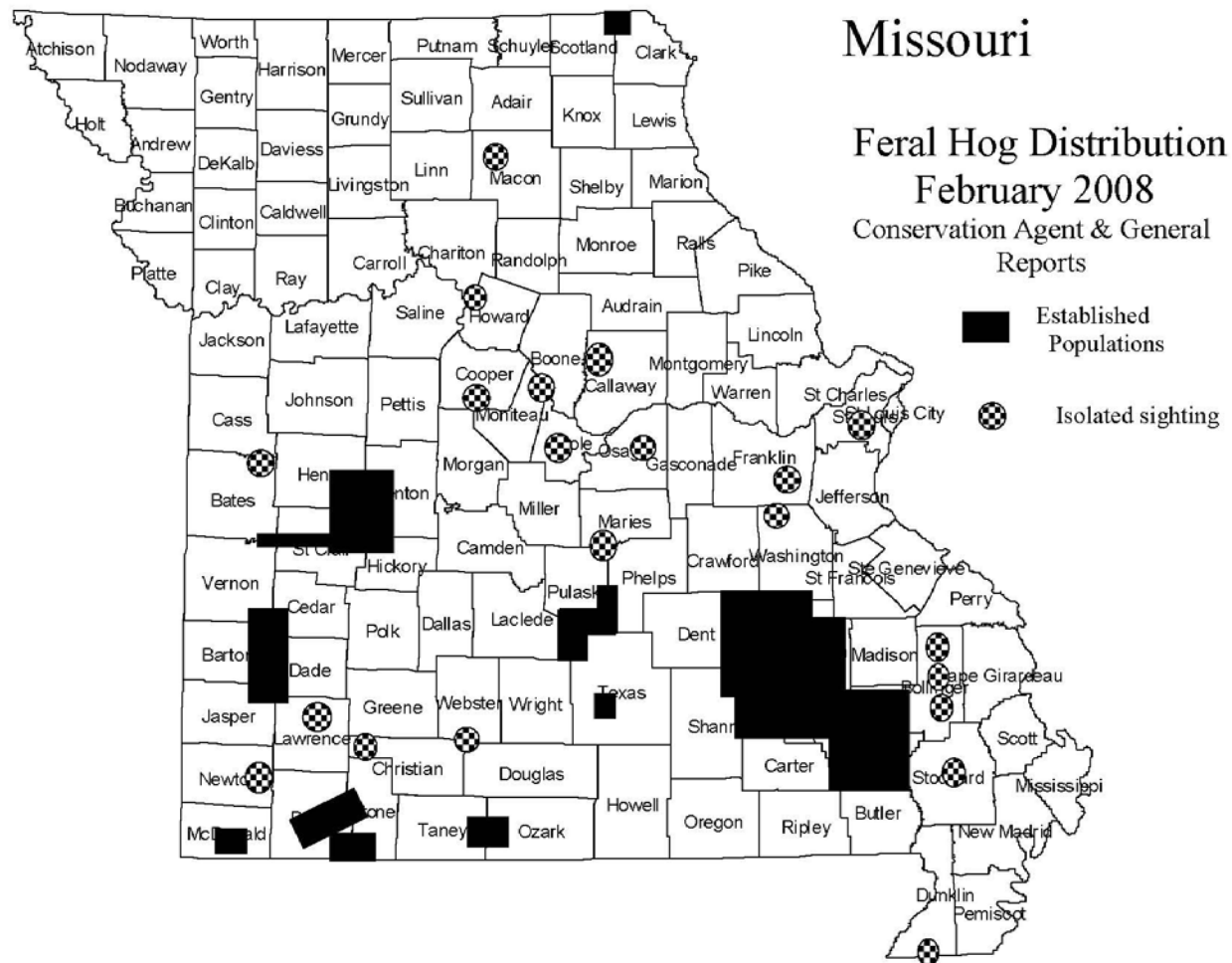


Figure 1
Feral Hog Distribution in Missouri, February 2008

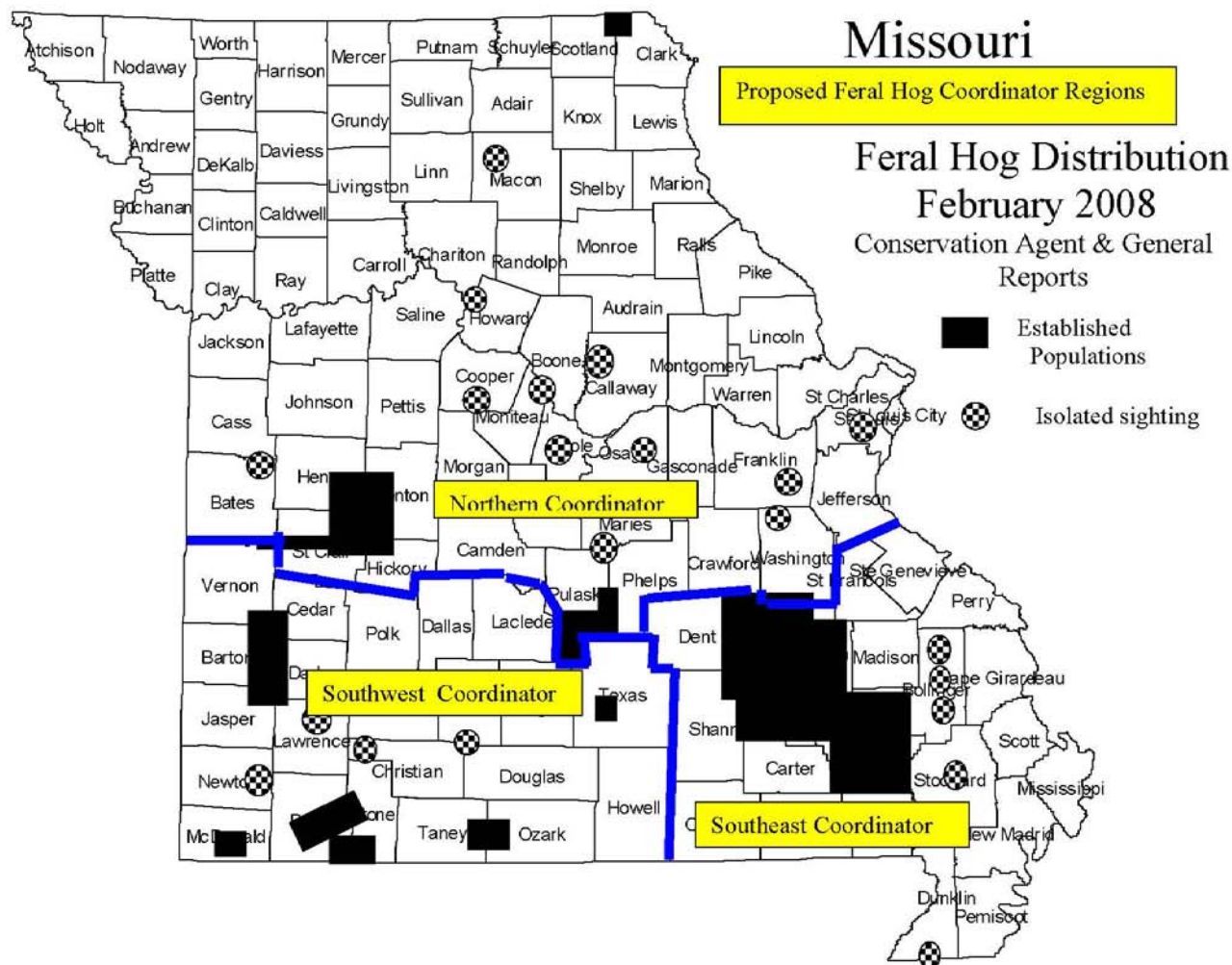
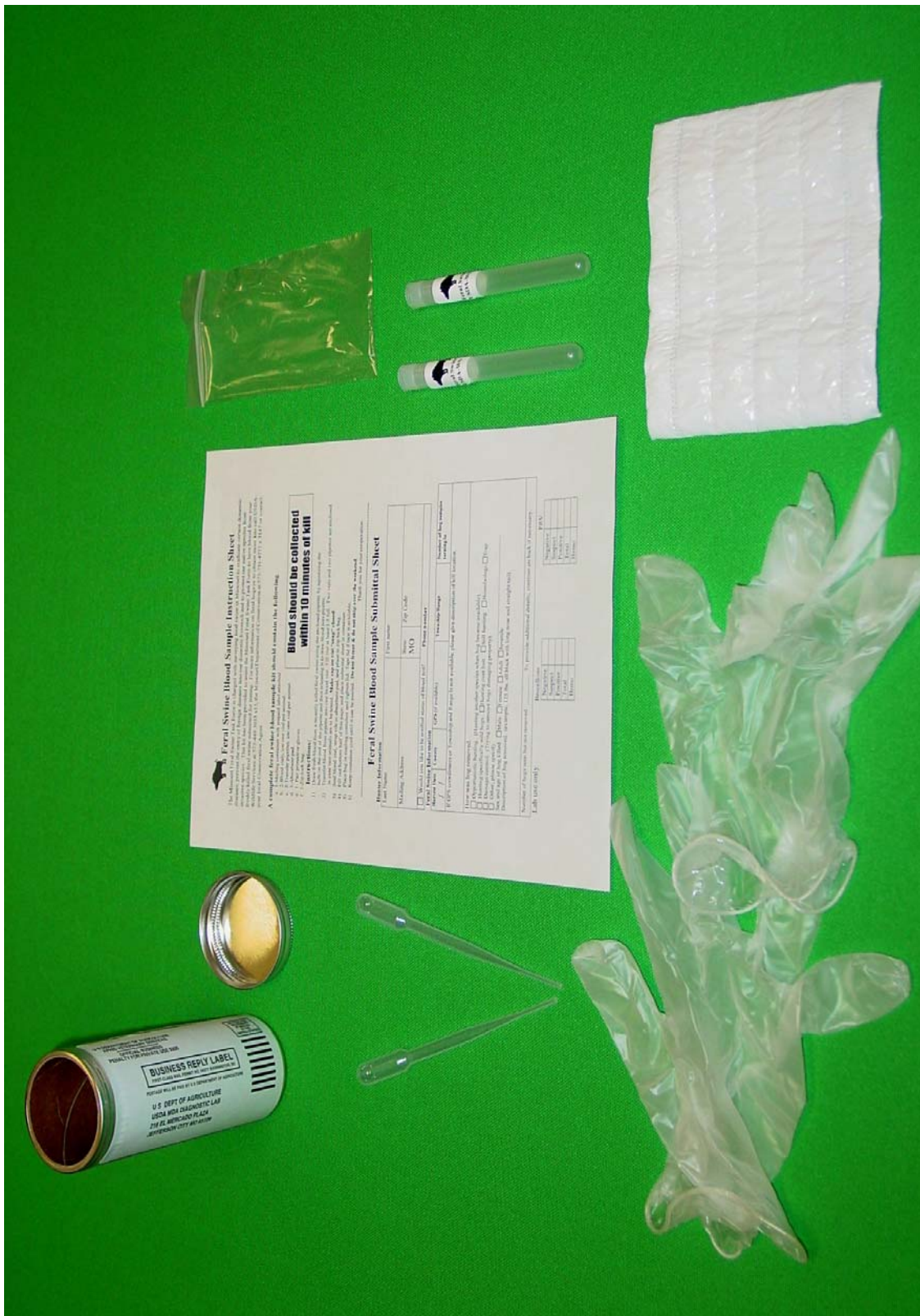


Figure 2
Proposed Feral Hog Coordinator Regions

Figure 3
Feral Hog Blood Collection Kit



The Missouri Feral Hog Task Force is providing this blood collection kit to monitor feral swine for diseases that affect people, pets, livestock and our native wildlife. For more information on feral hogs or to obtain more kits call USDA-Wildlife Services at **573-449-3033 x13**, the Missouri Department of Conservation at **573-751-4115 x3147** or contact your local **Conservation Agent**.

Collect blood within 10 minutes of kill
Do not allow blood to freeze

1) USE PROTECTIVE GLOVES

- 2) Draw fresh blood using the enclosed pipettes. This kit will test two hogs.
- 3) Fill **two vials for each hog** at least 1/2 full. Use two vials and one pipette for each animal. **MAKE SURE CAP ON VIAL SNAPS CLOSED.**
- 4) Seal blood vials, wrap vials in absorbent pad, and place in zip lock bag.
- 5) Fill out bottom half of this page, and place submittal sheet in container.
- 6) Place bag in mailing container and tighten lid. Tape lid closed if tape is available.
- 7) Keep container cool until it is mailed. **DO NOT SHIP OVER A WEEKEND AND DO NOT ALLOW BLOOD TO FREEZE.**

Thank you for your cooperation.

Hunter Information

Last Name		First name	
Mailing Address		State MO	Zip Code
<input type="checkbox"/> Would you like to be notified status of blood test?		Phone number	

Harvest Date / /	County	GPS (if available)	Township/Range/Section	Number of hog samples turning in
If GPS coordinates or Township, Range and Section are not available, please give description of kill location.				
<p>How was hog removed?</p> <p><input type="checkbox"/> Opportunistic hunting. (Hunting another species when hog became available).</p> <p><input type="checkbox"/> Hunting specifically wild hogs. <input type="checkbox"/> Hunting over bait. <input type="checkbox"/> Still hunting <input type="checkbox"/> Hounds/dogs <input type="checkbox"/> Trap</p> <p><input type="checkbox"/> Damage control. (Trying to remove hogs damaging property).</p> <p><input type="checkbox"/> Other, please specify. _____</p> <p>Sex and age of hog killed. 1st <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Adult <input type="checkbox"/> Juvenile</p> <p>2nd <input type="checkbox"/> Male <input type="checkbox"/> Female <input type="checkbox"/> Adult <input type="checkbox"/> Juvenile</p> <p>Description of hog removed. (example, 125 lbs. all black with long nose and straight tail).</p> <p>1st _____ lbs</p> <p>2nd _____ lbs</p>				
Number of hogs seen but not removed. _____ To provide additional details, continue on back if necessary.				

Brucellosis

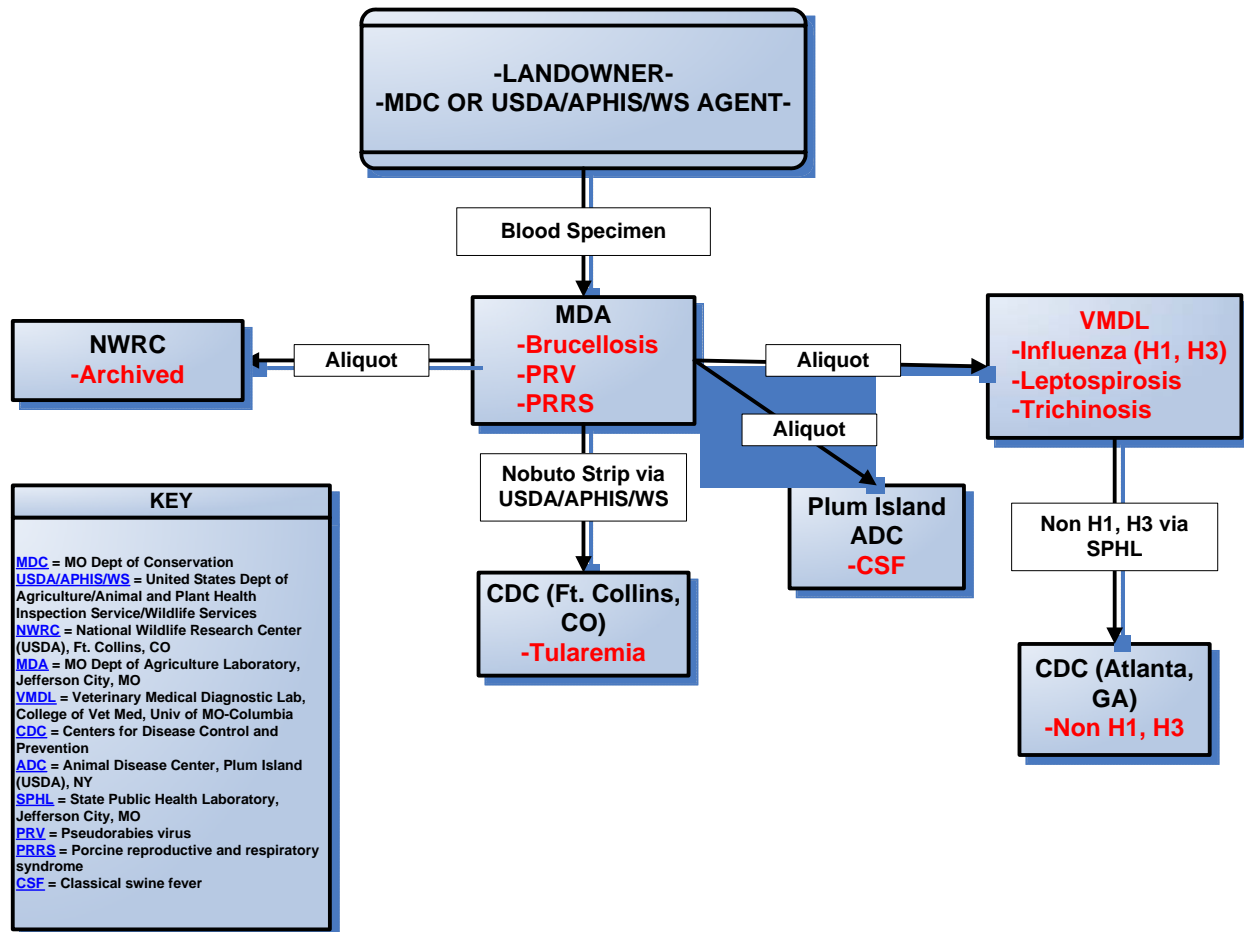
Negative	
Suspect	
Positive	
Total	
Hemo	

PRV

Negative	
Suspect	
Positive	
Total	
Hemo	

Lab, fax submittal sheet to 573-449-4382

Figure 5
FERAL HOG SPECIMEN TESTING LABORATORIES



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Glossary

CDC	Centers for Disease Control and Prevention
CSF	Classical swine fever
DHSS	Department of Health and Senior Services
DNR	Missouri Department of Natural Resources
MDA	Missouri Department of Agriculture
MDC	Missouri Department of Conservation
MOU	Memorandum of Understanding
NWRC	National Wildlife Research Center
PRRS	Porcine Reproductive and Respiratory Syndrome
PRV	Pseudorabies virus
USACE	United States Army Corps of Engineers (Also referred to as COE)
USDA	United States Department of Agriculture
USDA-APHIS	United States Department of Agriculture-Animal and Plant Health Inspection Service (Also referred to as APHIS)
USDA-APHIS-VS	United States Department of Agriculture-Animal and Plant Health Inspection Service- Veterinary Services (Also referred to as APHIS-VS)
USDA-APHIS-WS	United States Department of Agriculture-Animal & Plant Health Inspection Service- Wildlife Services (Also referred to as APHIS-WS)
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service

